

Work Order ID 157165

Thursday, February 16, 2017 8:11:14 AM

157165

Page 1

Item ID: 601.3083

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Adhesive Rubber Seal

Start Date: 2/16/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 3/2/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan:

DAS

21

Date:

Date:

FEB 16 2017

Tooling:

SPC (Y/N):

Date:

Date:

Run Start ***NR1***Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

647.3700

n/c

0.00

0.00

110

Purchasing

Purchasing

Memo

Issue P/O: 35341

Possible supplier: McMaster Carr

Supplier P#: 86715K27

note: 60A durometer required

Material release note is required.

4

FEB 16 2017

DAS

21

0.00

110

Receive & Inspect for Damage & Mat'l Certs

0.00

120

Packaging

Packaging

Memo

0.00

4 SP17-02-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 157165

Thursday, February 16, 2017 8:11:14 AM

157165

Page 2

Item ID: 601.3083

Accept

N9000040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Adhesive Rubber Seal

Start Date: 2/16/2017 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 3/2/2017 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				4			DAS 38 FEB 23 2017
140 *140* Packaging Packaging	Receive & Inspect for Damage & Mat'l Certs Memo	0.00 0.00		cck 009		4			DAS 9-20 FEB 24 2017
150 *150* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							DAS 21 9-20 FEB 24 2017

DAS
21
9-20

FEB 24 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

-Picklist Print

Thursday, February 16, 2017 8:11:20 AM

Page 1

Work Order ID: 157165

157165

Parent Item: 601.3083

601 3083

Parent Item Name: Adhesive Rubber Seal

Start Date: 2/16/2017

Required Date: 3/2/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 12.10.27 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

86715K27

Purchased

No

120

Each

0.0000

1

4

86715K27

Adhesive Rubber Seal 60A durometer

**

4 SP17-02-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



04881

SHEET 1 OF 1

REV: N/C

PREPARED
BY

J. BECKER

DATE: 02/26/15

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: 412 CABLE CUTTERS KIT

APPROVED BY:

ENGR

MFG

QC

EFF.

NEXT ORDER

TRANSACTION CODES (TC):

A-ADD
R-REVISE

C-CREATE
D-DELETE

REASON: DELETED F/N 57, REVISED F/N 6.

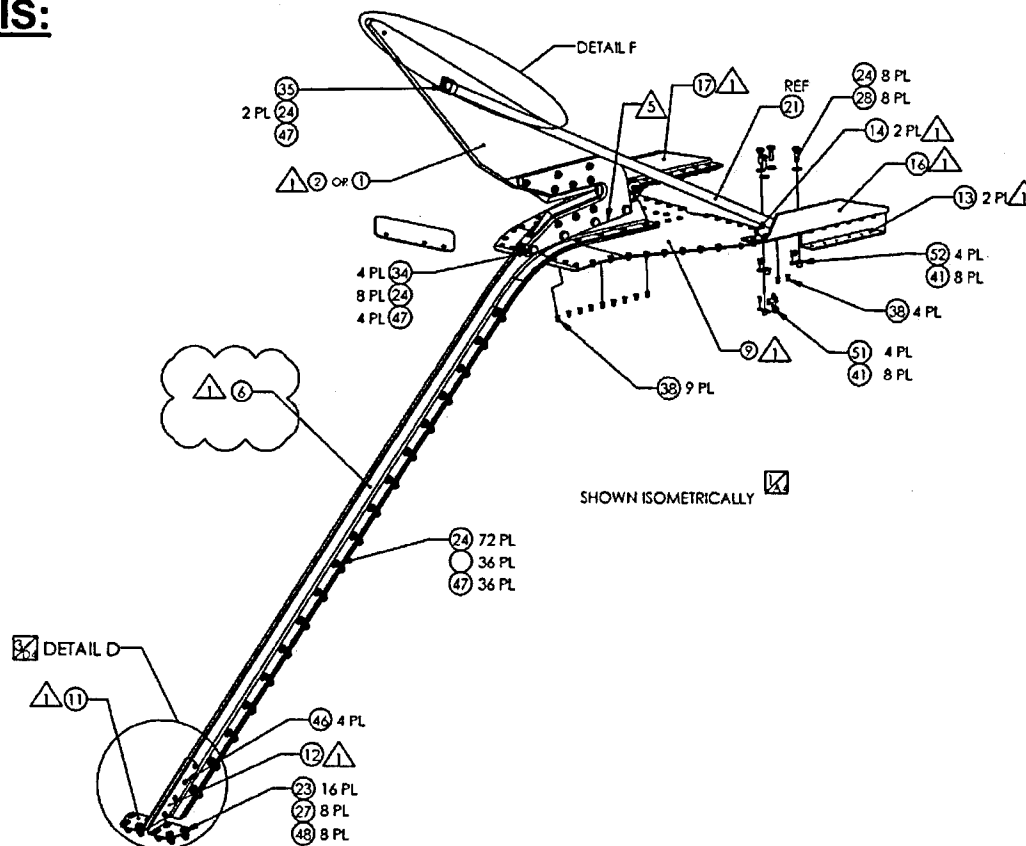
ECR:

N/A

ACTION ITEM:

1.

SHEET 1, ZONE C5 IS:



57	D	647.3916	1	1	1	1	DEFLECTOR UPPER HALF				
6	R	647.3903	1	1	1	1	DEFLECTOR ASSEMBLY				
F/N	TC	PART NUMBER	3704	3703	3702	3701	DESCRIPTION			MATERIAL	SPECIFICATION
			QTY								
DOCUMENTS EFFECTED:							CHANGE CATEGORY			DER REVIEW REQUIRED	
☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM							☐ MAJOR ☒ MINOR			☐ YES ☒ NO	

DART
AEROSPACE

APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

04845

SHEET 1 OF 1

DWG NO. 647.3700

REV: N/C

PREPARED BY J. BECKER

DATE: 02/11/15

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: 412 CABLE CUTTERS KIT

APPROVED BY: ENGR

MFG

QC

EFF. NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

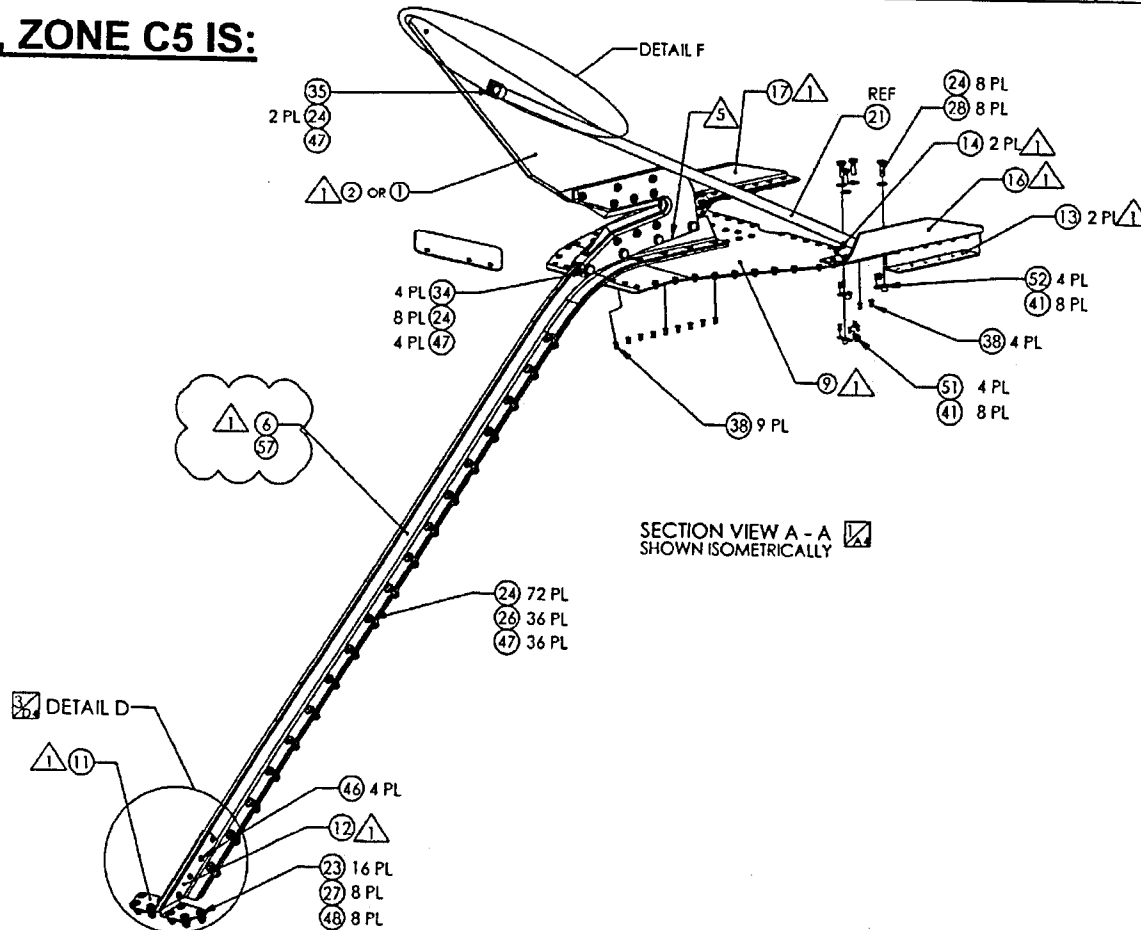
REASON: ADDED F/N 57

ECR:

ACTION ITEM:

1.

SHEET 1, ZONE C5 IS:



57	A	647.3916	1	1	1	1	DEFLECTOR UPPER HALF				
F/N	TC	PART NUMBER	3704	3703	3702	3701	DESCRIPTION			MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:			QTY				CHANGE CATEGORY			DER REVIEW REQUIRED	
							☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM			☐ YES ☒ NO	
							☐ MAJOR ☒ MINOR				

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02728				SHEET 1 OF 1	
	DWG NO. 647.3700	REV: NC	PREPARED BY R. ROSANO	DATE: 12/23/09	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: 412 CABLE CUTTERS KIT					
APPROVED BY: ENGR <i>[Signature]</i>		MFG <i>[Signature]</i>		QC <i>[Signature]</i>		EFF: NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: ADDED MODEL 214 TO APPROPRIATE DESCRIPTIONS				

SHEET 1, ZONE D7 IS:

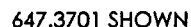
IS

							647.3704	204, 205, 212, 214 CABLE CUTTERS KIT HIGH		
							647.3703	204, 205, 212, 214 CABLE CUTTERS KIT LOW		
							647.3702	412 CABLE CUTTERS KIT HIGH		
							647.3701	412 CABLE CUTTERS KIT LOW		
		.3704	.3703	.3702	.3701	FIND	PART #	DESCRIPTION	MAT'L	SPEC.

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:				☒ MDL ☒ INSTALL INSTRUC ☒ ICA ☒ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☒ YES ☐ NO

NOTES:

- DETAIL C



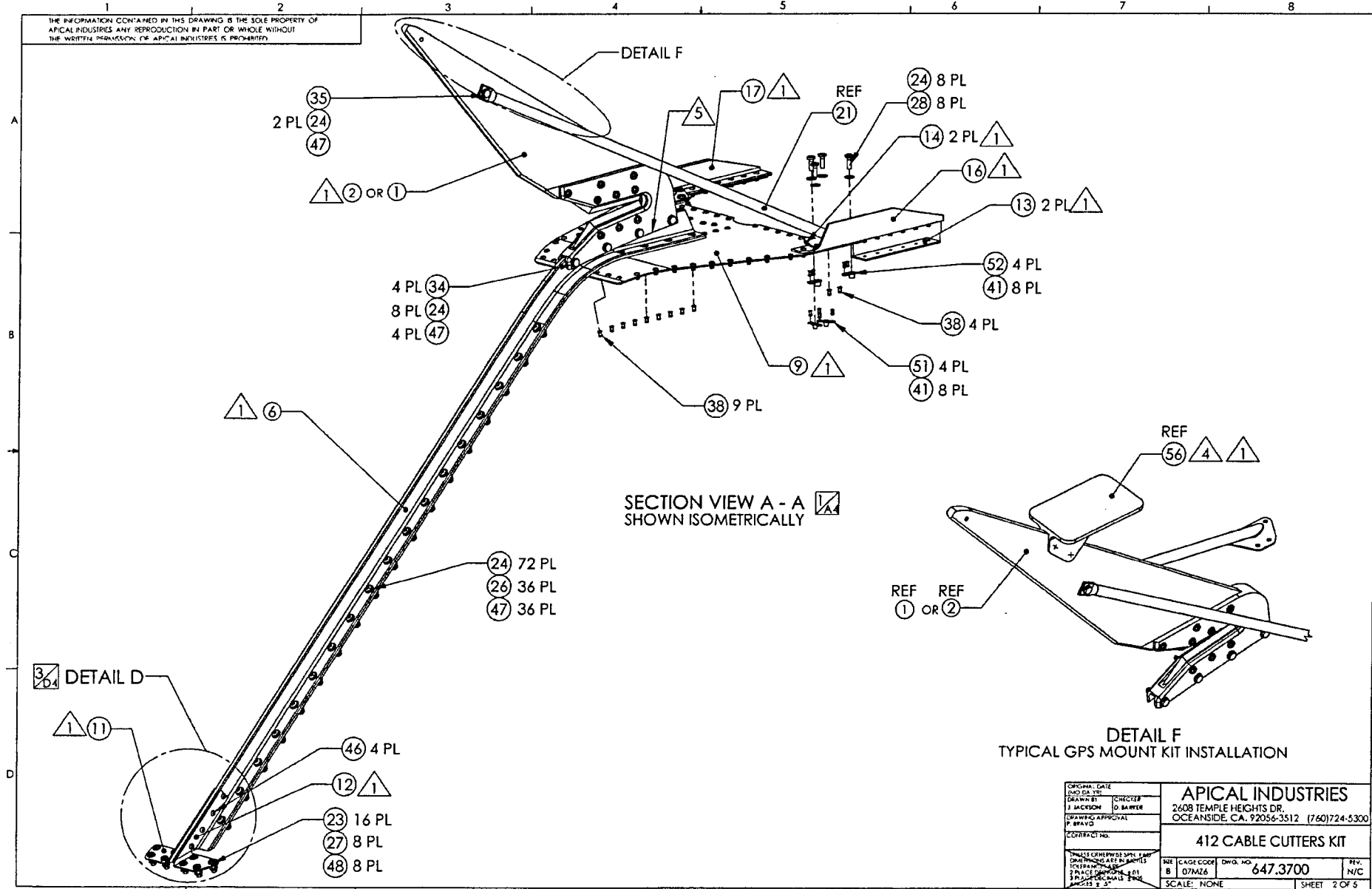
	REF	REF	REF	REF	56	647.5701	GPS MOUNT KIT			
	A/R	A/R	A/R	A/R	55	601.2045	RTV	LOCITE 998		
	A/R	A/R	A/R	A/R	54	601.1012	SEALANT	PF 1225 CLASS B		
	1	1	1	1	53	601.3063	ADHESIVE RUBBER SEAL	ML-6-3065		
	4	4	4	4	52	601.2957	NUTPLATE	MS210713		
	4	4	4	4	51	600.0795	NUTPLATE	MS21047-3		
	6	6	6	6	50	601.3066	NUTPLATE	MS21047-08		
	6	6	6	6	49	601.3065	NUTPLATE	MS21047-06		
	18	18	18	18	48	601.2973	LOCKNUT	MS21042-08		
	79	79	79	79	47	601.2943	LOCKNUT	MS21043-3		
	4	4	4	4	46	601.2364	CHERRY RIVET	CR3213-4-8		
	28	28	42	42	45	601.1183	CHERRY RIVET	CR3213-4-5		
	16	16	19	19	44	601.1915	CHERRY RIVET	CR3213-4-4		
	24	24	32	32	43	601.0790	CHERRY RIVET	CR3213-4-3		
	31	31	13	13	42	601.1039	CHERRY RIVET	CR3213-4-2		
3704	3703	3702	3701	FIND	PART #		DESCRIPTION	MATL	SPEC	

01728, 04845, 04881

[illegible]

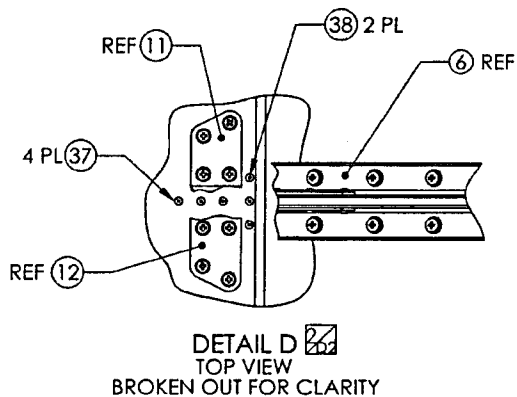
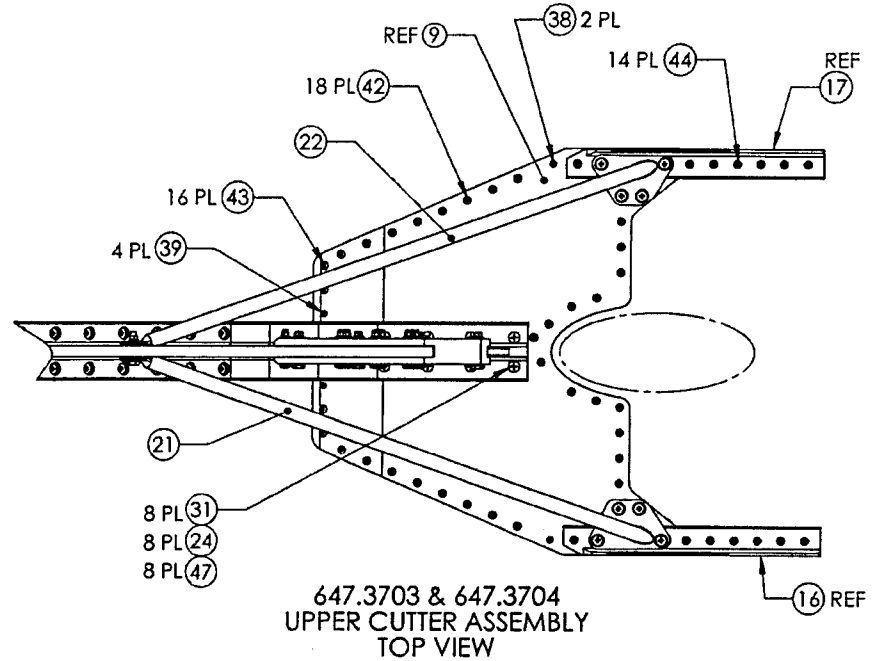
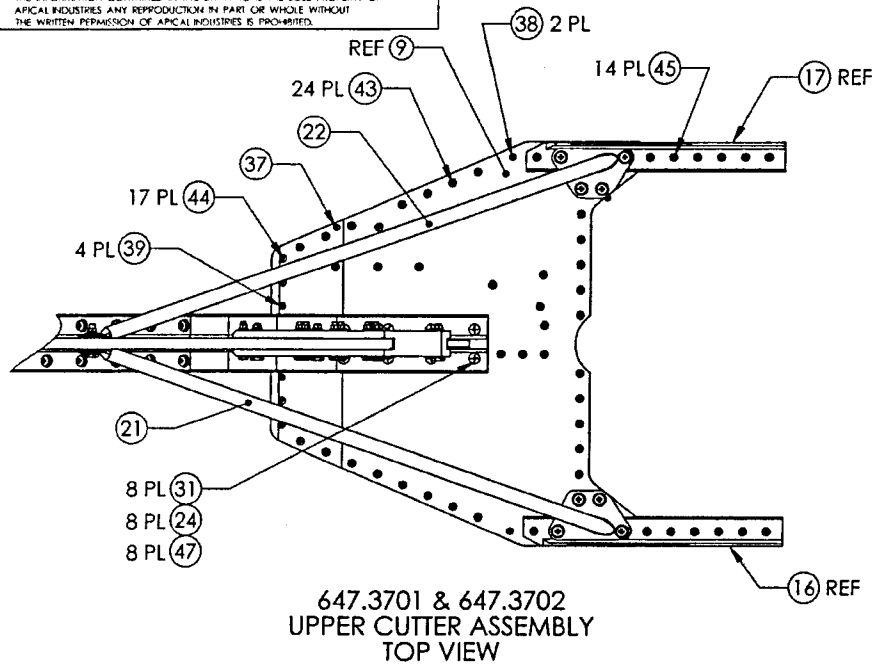
CITY		PARTS LIST	
NEXT ASSY (S)		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
ORIGINAL DATE 09-29-09 DRAWN BY J JACKSON CHECKED D BARBER DESIGNED APPROVAL B. BARBER 09-29-09 CONFIRMED P/N:		412 CABLE CUTTERS KIT	
(IF LIST OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACES CONTAINING "B" 2. SIMPLE DECIMALS 1/16" 3. DECIMALS 1/32"		SEE CASE CODE B 07M2L DWG. NO. 647.3700 SCALE: NONE SHEET 1 OF 1	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



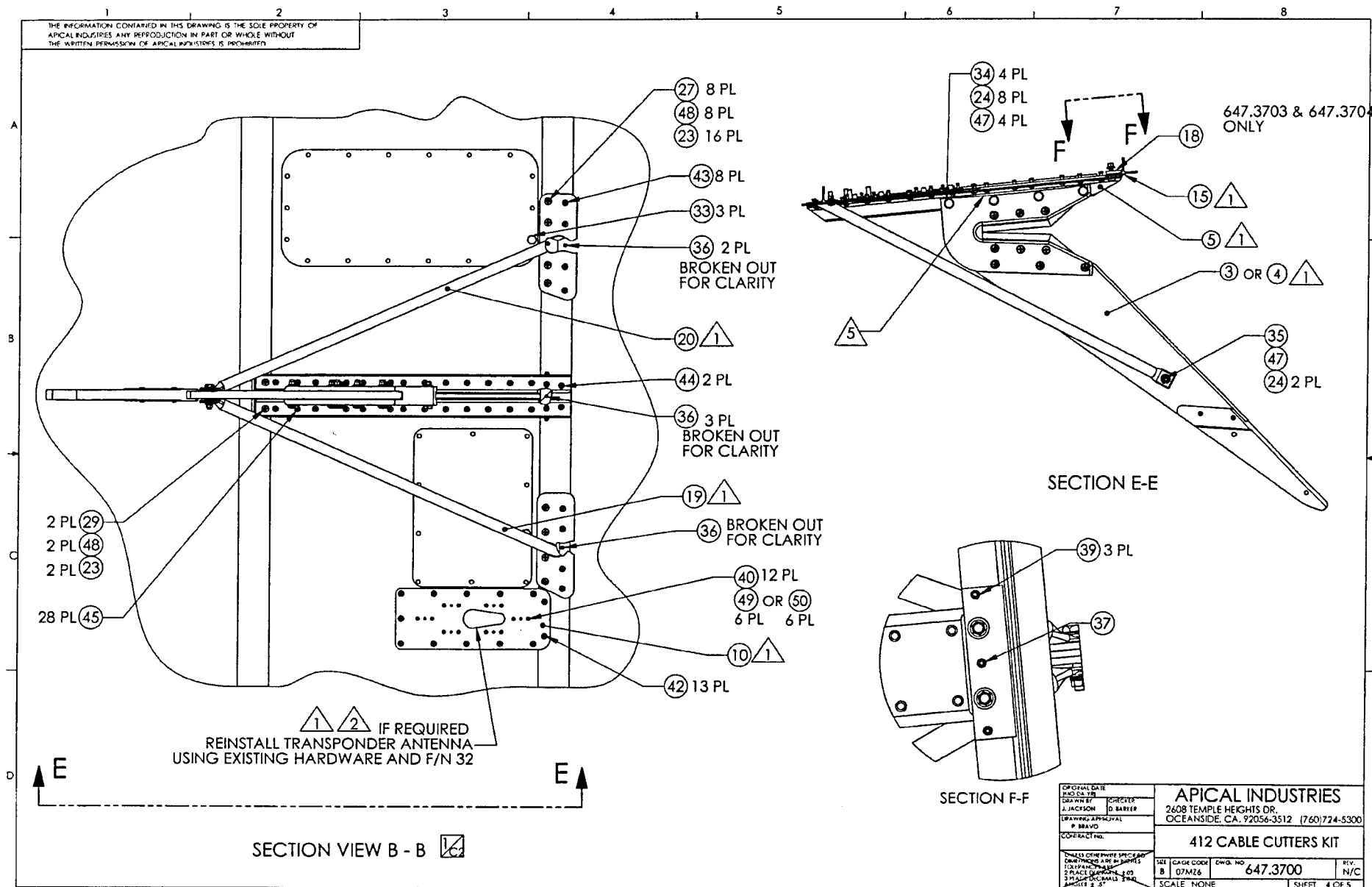
ORIGINAL DATE 1/10/01		CHECKED J. JACKSON	
DRAWN BY J. JACKSON		DESIGNED BY J. JACKSON	
CONTRACT NO.		CAGE CODE B 07M26	
QUANTITY 1000		DWG. NO. 647.3700	
SCALE NONE		REV. N/C	
SHEET 2 OF 5			

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ORIGINAL DATE NOV 04 1991		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY J. JACKSON	CHECKED D. BARRER	412 CABLE CUTTERS KIT	
DRAWING APPROVAL P. BRAVO	CONTRACT NO.	DATE CAGI CODE 8 07M26	DWG. NO. 647.3700
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES 101 INCHES 1/8 INCHES 1/16 INCHES 1/32 INCHES 1/64 INCHES 1/128 INCHES 1/256 INCHES 1/512 INCHES 1/1024 INCHES 1/2048 INCHES 1/4096 INCHES 1/8192 INCHES 1/16384 INCHES 1/32768 INCHES 1/65536 INCHES 1/131072 INCHES 1/262144 INCHES 1/524288 INCHES 1/1048576 INCHES 1/2097152 INCHES 1/4194304 INCHES 1/8388608 INCHES 1/16777216 INCHES 1/33554432 INCHES 1/67108864 INCHES 1/134217728 INCHES 1/268435456 INCHES 1/536870912 INCHES 1/1073741824 INCHES 1/2147483648 INCHES 1/4294967296 INCHES 1/8589934592 INCHES 1/17179869184 INCHES 1/34359738368 INCHES 1/72057594037927936 INCHES 1/144115188075855872 INCHES 1/288230376151711744 INCHES 1/576460752303423488 INCHES 1/1152921504606846976 INCHES 1/2305843009213693952 INCHES 1/4611686018427387904 INCHES 1/9223372036854775808 INCHES 1/18446744073709551616 INCHES 1/36893488147419103232 INCHES 1/73786976294838206464 INCHES 1/147573952589676412928 INCHES 1/295147905179352825856 INCHES 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BROKEN OUT FOR CLARITY
RH SIDE ONLY

△ LH ⑧
OR
△ RH ⑦

③①
②④
④⑦

②⑧ 3 PL
②④ 6 PL
④⑦ 3 PL

⑤③ TRIM TO FIT

②⑥ 3 PL
②④ 6 PL
④⑦ 3 PL

②⑤ 6 PL
②④ 12 PL
④⑦ 6 PL

DETAIL C 
LH SHOWN, RH OPPOSITE
2 PL

ORIGINAL DATE 11/12/2019		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY J. JACKSON	CHECKED D. BARBER	412 CABLE CUTTERS KIT	
DRAWING APPROVAL P. BRAYCO		SCALE NONE	REV N/C
CONTRACT NO.		DWG. NO. 647.3700	SHEET 5 OF 5
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE IN INCHES FRACTIONS DECIMALS 3 PLACES DECIMALS 100 3 PLACES DECIMALS 1000 3 PLACES DECIMALS 10000			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO35341

Purchase Order Date 2/16/2017

PO Print Date 2/16/2017

Page Number 1 of 3

Order From :
MCMASTER-CARR SUPPLY CO,
P.O. BOX 7690
CHICAGO, IL 60680-7690
US

VU-MCM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

EMMAILED

Contact Name
Vendor Phone 330 995 5500

Ship To Contact
Ship To Phone
Ship Via: Purolator ground ppd
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 10
Currency USD
FOB FCA - (Free Carrier)

FEB 17 2017

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	86715K27 DAS 38 9-89 AS PER DWG 601.3083 REV. N/C B157165	Adhesive Rubber Seal 60A- durometer	2/21/2017 Yes 2/21/2017		4.00 Each	\$16.73	\$66.92
Line Total:							\$66.92
2	91525A120 AS PER DWG D3456 REV. A B157166	washer	2/21/2017 Yes 2/21/2017		50.00 Each	\$0.25	\$12.52
Line Total:							\$12.52

Note:

2/16/2017



200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO35341

Order Placed By
Chantal Lavoie

McMaster-Carr Number
7270535-01

Page 1 of 1

02/17/2017

Line	Product	Ordered	Shipped
1	86715K27 High-Strength Oil-Resistant Buna-N Rubber Sheet Adhesive Back, 1/16" Thick, 12" X12", 60A Durometer DAS 38 9-88	4 Each	4

8017-02-22

Shipped separately from our Cleveland warehouse on 02/17

2	91525A120 316 Stainless Steel Washer Oversized, 1/4" Screw Size, 0.281" ID, 1" OD	2 Packs	2
3	6605K56 Hook and Loop Cable Ties 24" Overall Length, Meets UL 94V2	3 Packs	3
5	5978A12 Brass Hammer with Hickory Handle, 1 lb.	2 Each	2
6	41665T27 Graduated HDPE Plastic Jar 64 oz./ 1900 ml Capacity	2 Each	2

Expected to ship

4	8647A22 Mitutoyo Standard Electronic Caliper 500-197-30, 0-8" (0-200MM) Range	1 Each	1 Feb 20-23
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Certificate of compliance

This is to certify that the above items were supplied in accordance with the description and as illustrated in the catalog. Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.

Sarah Weinberg

Sarah Weinberg
Compliance Manager